

TRACTORS TURN FARMING TO JOY-RIDING



FIELD WORK

The gasoline horse is rapidly revolutionizing American agriculture: Robert H. Moulton describes for our readers some of the wonders performed by the mechanical hired hand on our broad acres



FLOWING



BIG LOADS ON BAD ROADS

THE farmer took to the automobile as he does to a circus. Old Dobbin's of the buggy has long since been smothered by the exhaust from the four-cylinder gas vehicles, and now he is being ousted from his old and arduous vocation of plowing and harvesting. If it were not for the welcoming arms of the belligerent war buyers, there would be no one to love or cherish our black beauties, and like poor relations, they would have to survive on the husks. Farming has ever been attractive to the city chap, and it has always been extremely toilsome to the native. But now, with the aid of mechanical hired hands, farming in the future will be more joy-riding. Instead of following a team of panting, perspiring horses and stumbling over rough clods in the broiling sun while trying to keep under control a plow whose diabolical disposition is to twist and turn from the straight and even furrow, Mr. Farmer can put on his automobile goggles and gloves, seat himself comfortably in the spring seat of a tractor, and under a canvas canopy that shuts away the sun, guide his obedient steel steed across the fields. In the springtime the plowing can be done to the music of the birds, who gather around to watch for the luckless but luscious worms turned up by the blades. By one turn of the wheel, a battery of disk plows can be made to obey orders like soldiers.

When the plowing is done, the mechanical hired man will as cheerfully pull a harrow or a seeding machine, and no stops need be made in the shade to allow the "driver" to "blow." A tractor loves to work and all it asks in return is that its stomach be kept full of the spirits that enliven but do not intoxicate.

During the dinner hour, if the farmer follows his efficiency book faithfully, he will connect up his tractor engine with the pump and fill the water reservoir, or perhaps he will turn the churn for mother. After a long pull at the elder barrel and the distillate tank, both master and servant are ready to resume operations.

As the seasons merge one into another, and the crops are all planted and growing under the genial smiles of Old Sol and the sympathetic ministrations of Jupiter Pluvius, Mr. Farmer, with nothing to do but watch his grain grow, can drive his tractor over to the neighboring wood lot, and with the help of his husky sons, or his neighbor's stalwart sons, can cut enough cordwood to defy the advance and siege of Jack Frost. The modern tractor loves to be tied to a buzz saw, and it sings right merrily while doing its work. When the wood is cut, the obliging tractor will haul it to the woodshed, and then, like the famous man of history, will look for new work to conquer.

The overwhelming advantage of the tractor over horses is that of power and endurance. If the supply tank of one of these machines is kept full of fuel, it will work on indefinitely without rest, whereas beasts of burden demand time to eat and sleep and rest. Then, too, it is much easier on the farmer to sit on a seat and plow by turning a wheel than to follow the furrows on foot. Consequently, the farmer with a tractor will do all his plowing in from a fourth to a half of the time required with horses. By equipping the machines with electric lights, generated by the motor, the surrounding ground can be made as light as day, and plowing can go on independent of the sun. Poor Dobbin would give up the ghost if subjected to such treatment.

The superiority of the tractor is also demonstrated by the ability to get over ground so soft and muddy that ordinary horses and farm implements would mire in. The modern ball-bearing tractor is built to run on its own track. Being wide and flat, with the weight of the machine evenly distributed, this caterpillar type of perambulator can navigate through a sea of mud, and by its great traction power can pull anything except teeth. In the rice fields of California, where water stands upon the ground during all the growing season, the tractor is found to be the only feasible means of getting over the fields for plowing, seeding, cutting and harvesting the crop. It even furnishes the motive power for thrashing the rice.

If the road in front of the farm is rough and needs the smoothing influence of the tractor, it will do the job and do it right. If the hens have been industrious, or bossy's product has been converted into golden butter or cheese for the city folks, Mr. Farmer can haul them to market by hitching a trailer behind his tractor. Many of the machines are bought for their hauling ability alone. It will even take the folks to church on Sunday, if the jitney happens to break down on Saturday night.

In fact, the tractor is as versatile as a movie star, and it doesn't mind showing off its diverse talents. One has even been known to rid a cellar of rodents by "coughing" the gas from its exhaust through a rubber tube run into the private dwelling of Mr. Rat.

The development of the tractor is a matter of

evolution. It has been with us for many years, but the older members of the family, though big in stature, were extremely awkward, had many ills and didn't believe in efficiency. They were very impressive to look at, but when the farmer bought one he usually found that it made the most durable impression upon the ground. It was a better staller than a politician.

Through education, however, it was developed into a finer thing. It lost a lot of its awkwardness with its size and gained in strength and flexibility. Its groins were converted into action. It began to wear new shoes, and when a mudhole or a gully confronted it, instead of puffing and snorting and marking time, as the older ones did, it rolled on through the soft spots, or climbed out of the ditches. Its new revolving track shoes could go anywhere, and it did. The latest proof of this is seen in the reports from the European battlefields, where the armored "tanks" are walking over all obstacles. It is said on reliable authority that these tanks are built upon a foundation of an American type of tractor.

It is in orchard work that the tractor has won its way into the hearts of many owners. In a well-managed orchard it is necessary to plow up the soil as close to the trees as possible. With a team and the old-fashioned plow, it is impossible to cut corners and reach little out-of-the-way nooks, but not so with the tractor. It can turn

around like a whirling dervish and can come close enough to a tree or the fence to caress but not offend it. A favorite trick of one make of a California tractor is to turn completely around on an ordinary railroad flat car. When one considers the width of these cars the feat is a remarkable one. If all else fails, the machine can get a job in a circus as a contortionist.

One of the odd uses to which tractors are put is that of clearing land for cultivation. On the virgin fields of Canada the ranchers found the new land to be thickly covered with tough brush and young trees, forming a dense mat, to clear which by hand seemed a formidable task. A tractor owner rigged up a sort of "summer snow-plow" made of two sharp blades at the bottom and a number of steel rods placed horizontally over a V-shaped frame that ran to a height of four or five feet. By fastening this contrivance to the front of his tractor, and by backing the forest growth as he would a snowdrift, the brush was cut off close to the ground and thrown to one side and burned. Later the same tractor went over the ground with a gangplow and cut out all the roots and turned up the soil for planting.

The tractor on the farm has come to stay, and the up-to-date farmer will find it as hard to get along without one as a wife, and much easier to get along with.

Trade Secrets Held at Enormous Prices

The Oxford Press syndicate values its formula for making the very thin, tough paper used in the Bibles and encyclopedias at more than \$1,000,000. To perfect the process required 25 years of hard work and the expenditure of \$1,000,000 in cash.

A secret of even greater value is the formula for making the paper employed for the Bank of England notes. This is a family possession of the Portals of Lavenstoke, to whom already in two generations it has brought an enormous fortune.

The brilliant red cloth of the cardinals' robes worn at the Vatican has been manufactured for many generations by the same firm of merchants at Burscheid, near Aix-la-Chapelle.

The secret process of distilling the dye is given by father to son, with every precaution to prevent any outsider from gaining possession of the recipe, according to a writer in the Los Angeles Times. In this connection it is rather curious to note that this family of cloth merchants is of Huguenot descent and is Protestant today.

Recipe for Green Chartreuse.
When the monks of La Grande Chartreuse were expelled from France, the senior abbot carried the recipe for the famous liqueur in a casket of tempered steel, and this was never for a moment out of his possession. In the open market afterward the formulae for the twin liqueurs, the green chartreuse and the yellow, were sold for \$1,000,000. At the time this liqueur was first made the recipe was written on a single fragment of parchment, six inches by nine. One by one additional ingredients were introduced.

It has been stated that at the present time the mixture contains 137 different substances. And every addition to the drink required an addition to the recipe.

The result was a volume of more than 100 pages. It is no exaggeration to say that this is the most valuable book in the world. This becomes rather amusing when we remember that the mendicant friar who first concocted the liqueur regarded his invention with considerable disfavor.

He was as shortsighted as Giovanni Farina, who was the originator of eau de cologne. He offered the recipe for sale at \$3,500. A conservative estimate of the total value of its sales' profits since that is \$25,000,000.

Famous Maraschino Cordial.

The Nams of Zara, in Dalmatia, were wiser. They possessed as one of their heirlooms a family recipe for a daisy distilled from the maraschino, or wild cherry. When they finally consented to part with their secret they received therefor a large sum in cash and land to the extent of several thousand acres. This is the cordial popular the world over as Maraschino.

It has frequently happened that valuable trade secrets have been lost beyond recovery. For instance, the best watch oil, it appears, cannot be obtained today because the secret process of mixing it perished with the inventor. It is said that the last quart of this famous liquid was sold for \$200, and that was 35 years ago. Since then every effort has been made to analyze the product in an attempt to reproduce the oil, but without success. The man who made it who alone knew its composition died, and, it further appears, not even his name or the place of his burial is known. He never revealed to anyone the details of his process and it was not until after his death that the real value of the oil was appreciated.

Business firms are not the only possessors of trade secrets. Governments are just as zealous

in guarding valuable processes as are manufacturers. For example, the Chinese government is the owner of the secret of making vermilion red, which is held by many experts to be the most beautiful shade of red in the world. No one has ever been able to produce a like vermilion.

The Turkish government, it appears, possesses a similar secret process of inlaying precious metals in the hardest steel. The work is done perfectly and defies all attempts at reproduction.

In 1913 it was announced that a distinguished chemist of the Imperial technical school of Moscow had solved the problem of making artificial rubber, and that he could sell the new product at about 80 cents a pound. Yet the price of rubber remains pretty much the same, if not more. The reason may be found by examining the patent office records. In the last decade many hundreds of patents for artificial rubber have been taken out. Substitutes have been made from petroleum, from coal tar, turpentine, peat, from nitrated luscious oil and by treating cereals with phylin.

The latter invention created a considerable sensation so long ago as 1908, yet, judging by the constantly increasing demand for the natural product, it has had little effect upon the real rubber market.

The chemist, working in his laboratory, can take any substance and analyze it, that is, break it up into its original constituents, and tell you what they are and how much of each element the substance in question is composed of; but when it comes to building up the original substance out of its prime constituents he is at sea, for the most part. By dint of long and patient experiments or perhaps by pure chance he may succeed in reproducing some few natural products, but that is as far as he can go.

Indigo blue took many years to synthesize. A German chemist accomplished it at last, but the curious discovery was made that if blended with the natural product made from the indigo plant the color obtained was both more durable and brighter than that made by either dye alone. So artificial indigo has not yet ruined the indigo planter.

Gutta Percha Becomes Scarce.

Artificial camphor has also been produced. It is now made from pine-tree turpentine. But the chemist has not yet succeeded in synthesizing gutta percha. This commodity yearly becomes scarcer. Enormous quantities are required for various purposes, notably the covering of submarine cables and the making of golf balls. A fortune awaits the man who can make artificial gutta percha at a price that will permit it to compete with the juice of the Didiopsis gutta.

Cork is another substance of everyday use that seems to defy the inventor. The only substitute for cork is paper treated with paraffin wax. But such a cork could not be used for a bottle of wine. So far nothing has been artificially made to compete with the bark of the cork oak.

At Delhi, in India, stands an ancient iron monument which, though exposed to all weathers, never rusts or decays. Yet it has no protective covering. Here is a secret which would be simply invaluable to the world, which has been discovered by some Indian artificer of old and most unfortunately lost. At a meeting of steel and iron men in London, the chairman said that they could face the future with complacency if they could rediscover the secret. To shipowners alone it would mean a yearly saving of millions. But is the great enemy of the steel ship and she has constantly to go into dock to have her hull coated with an anticorrosive solution.

SOME POSTSCRIPTS

Portions of store windows can be utilized as blackboards for sign writing by sand blasting the outside of the glass and painting the inside.

Scientists in one European country have offered a gold medal for the best method for preparing leadless inks for printing and lithographing.

Attachments for a popular type automobile have been invented to convert it into a farm tractor without the removal of any of its original parts.

To Drive Out Malaria And Build Up The System
Take the Old Standard GROVE'S TASTELESS CHILL TONIC. You know what you are taking, as the formula is printed on every label, showing it is Quinine and Iron in a tasteless form. The Quinine drives out malaria, the Iron builds up the system. 60 cents.

A Get-Rich-Quick Scheme.
Two young Irishmen in a Canadian regiment were going into the trenches for the first time, and their captain promised them five shillings each for every German they killed.

Pat lay down to rest, while Mick performed the duty of watching. Pat had not lain long when he was awakened by Mick shouting:
"They're comin'! They're comin'!"
"Who's comin'?" shouts Pat.
"The Germans," replies Mick.
"How many are there?"
"About fifty thousand."
"Begorra," shouts Pat, jumping up and grabbing his rifle, "our fortune's made!"—London Opinion.

SKIN TORTURES

That Itch, Burn and Scale Quickly Relieved by Cuticura—Trial Free.

It takes about ten minutes to prove that a hot bath with Cuticura Soap followed by gentle applications of Cuticura Ointment will afford relief and point to speedy healing of eczemas, itchings and irritations. They are ideal for all toilet purposes.

Free sample each by mail with Book. Address: postcard, Cuticura, Dept. L, Boston. Sold everywhere.—Adv.

A Sad Memory.

Availing herself of her ecclesiastical privileges, the clergyman's wife asked questions which, coming from anybody else, would have been thought impertinent.

"I presume you carry a memento of some kind in that pocket you wear?" she said.

"Yes, ma'am," said the parishioner; "it is a lock of my husband's hair."
"But your husband is still alive," the lady exclaimed.

"Yes, ma'am, but his hair is gone."

Utter Indifference.

"No wonder she's unhappy. She doesn't know where her husband is half the time."

"A great many wives don't know where their husbands are half the time."

"Perhaps so; but he doesn't even take the trouble to make her think she knows where he is."

COVETED BY ALL.

but possessed by few—a beautiful head of hair. If yours is streaked with gray, or is harsh and stiff, you can restore it to its former beauty and luster by using "La Creole" Hair Dressing. Price \$1.00.—Adv.

Through a man's tongue we get a glimpse of his brain—or lack thereof.

The cost of experience is never fully realized until one goes to law.

Faint heart often wins a fair lady—with a little assistance on her part.

WRIGLEY'S



The goodly that is beneficial to teeth and stomach is best for children.

Wrigley's is **Helpful**

to all ages. It massages and strengthens the gums, keeps teeth clean and breath sweet, aids appetite and digestion.

The **Flavor** Lasts



What He Heard.
Visitor—Well, you don't know who I am.
Kid—Oh, yes, I do. You're the man my sons would be a good catch for our Lillian.

Not a Rare Case.
"Do you love your ma-in-law?"
"You bet I do. My wife would break my neck if I didn't."

A pine tree in New Zealand is estimated to scientists to be 1,300 years old.

Couldn't Do It.
Short—I say, old man, can you bend me ten dollars?
Longley—Impossible. I've tried to lend you money several times, but you always seem to look upon it as a gift.

Its Aspect.
"Yours must be a war garden."
"What do you mean?"
"I notice it is full of flags."

An automobile novelty combines the functions of an ordinary spring and a shock absorber.

Children Cry For



What is CASTORIA

Castoria is a harmless substitute for Castor Oil, Paregoric, Drops and Soothing Syrups. It is pleasant. It contains neither Opium, Morphine nor other narcotic substance. Its age is its guarantee. For more than thirty years it has been in constant use for the relief of Constipation, Flatulency, Wind Colic and Diarrhoea; allaying Feverishness arising therefrom, and by regulating the Stomach and Bowels, aids the assimilation of Food; giving healthy and natural sleep. The Children's Panacea—The Mother's Friend.

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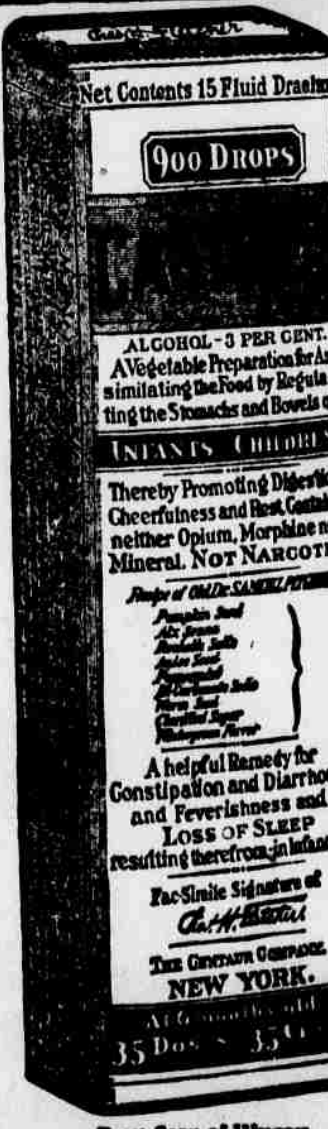
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The Kind You Have Always Bought

THE SERRA COMPANY, NEW YORK CITY.



Exact Copy of Wrapper.

How, Indeed?
"How can you expect to marry, my daughter when you have no money?"
"How could you expect me to marry her if I did have?"—Judge.

WOMAN'S CROWNING GLORY
is her hair. If yours is streaked with gray, grizzled, gray hairs, use "La Creole" Hair Dressing and change it to the natural way. Price \$1.00.—Adv.

Embarrassed.
"You ought to have seen Gladys in her stunning bathing suit."
"I thought I ought not to."

THIS IS THE AGE OF YOUTH.
You will look ten years younger if you dab on your eyes, grizzled, gray hairs by using "La Creole" Hair Dressing.—Adv.

Better borrow from a pawnbroker than a friend.

Lots of men who have an aim in life lack ambition.

When Your Hair Needs Care
Try "La Creole" Hair Dressing. It will restore your hair to its natural color and texture. Price \$1.00.—Adv.

The Politest Man.
Vice President Marshall declares that the politest man lives in Newark, O. Mr. Marshall made a campaign speech there last fall. When he was about half through, a man made his way quietly from the rear of the room up to the edge of the platform, waited until Mr. Marshall paused to swallow, at the end of a paragraph, and then offered to shake hands with the vice president.

"I'm sorry, but I'll have to bid you good night," the man said. "I've got to go home now."—F. C. Kelly, in Collier's Weekly.

A Puzzle.
"Ice cream is made from milk, sugar and eggs. It is bound to be nourishing."
"That may be, but I'm hanged if I see how it can contain heat units."

The Advantage.
"Beauty is best skin dress."
"How then, you can't skin only people to see the good underneath."

Alphonse is the leading actor in the manufacture of hard time clock, followed by Minnie and New York.

A GUARANTEED REMEDY FOR HAY FEVER—ASTHMA

YOUR SUFFERING WILL BE RELIEVED BY THE USE OF DR. R. SCHIFFMANN'S ASTHMADOR

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